



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,669	04/05/2001	Yasuharu Kudo	9281-3950	3502
757	7590	02/12/2004	EXAMINER	
BRINKS HOFER GILSON & LIONE P.O. BOX 10395 CHICAGO, IL 60611			TRAN, TRANG U	
			ART UNIT	PAPER NUMBER
			2614	

DATE MAILED: 02/12/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/826,669

Applicant(s)

KUDO, YASUHARU

Examiner

Trang U. Tran

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-9 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments with respect to claim 1-3 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Resch (US Patent No. 4,564,858) in view of Jones (US Patent No. 5,051,711).

In considering claim 1, Resch discloses all the claimed subject matter, note 1) the claimed a local oscillator that outputs a local oscillation signal is met by the station carrier oscillator 34 (Fig. 3, col. 3, line 26 to col. 4, line 25), 2) the claimed a mixer that mixes a supplied television intermediate frequency-converts a resultant signal to a television signal of a specific channel through which the signal is to be transmitted among television channels is met by the mixer 32 (Fig. 3, col. 4, lines 1-36), and 3) the claimed a band-pass filter connected at a post stage of the mixer and tuned to a frequency of the specific channel is met by the harmonic filter 36 (Fig. 3, col. 4, lines 1-36). However, Resch explicitly does not disclose the claimed a variable band-pass filter, wherein a tuning frequency of the variable band-pass filter can be shifted to a frequency out of a frequency band of the specific channel. Jones teaches that the general purpose

Art Unit: 2614

of the present invention uses a single set of quartz crystals in a ladder configuration, fixed conductors, and varactor diodes to achieve a filter with bandwidth continuously variable over a range that is normally covered by switch-selecting several fixed bandwidth filters (Figs. 1-3, col. 2, lines 11-35 and col. 3, line 30 to col. 4, line 19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the variable band-pass filter as taught by Jones into Resch's system in order to pertain to intermediate frequency band-pass filter used to provide frequency selectivity in either a radio receiver or a radio transmitter.

In considering claim 2, the claimed wherein the variable band-pass filter is tuned in range from a first frequency to a second frequency, the specific channel is set between the first frequency and the second frequency and the claimed a frequency out of the band is lower than the first frequency or is higher than the second frequency is met by the variable band-pass filter which uses a single set of quartz crystals in a ladder configuration, fixed conductors, and varactor diodes to achieve a filter with bandwidth continuously variable over a range that is normally covered by switch-selecting several fixed bandwidth filters (Figs. 1-3, col. 2, lines 11-35 and col. 3, line 30 to col. 4, line 19) of Jones.

In considering claim 3, the combination of Resch and Jones disclose all the limitations of the instant invention as discussed in claim 1 above, except for providing the claimed wherein when the frequency of the specific channel is higher than a middle frequency between the first and second frequencies, the frequency out of band is set to be equal to or lower than the first frequency, and when the frequency of the specific

Art Unit: 2614

channel is lower than a middle frequency between the first and second frequencies, the frequency out of band is set to be equal to or higher than the second frequency. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate when the frequency of the specific channel is higher than a middle frequency between the first and second frequencies, the frequency out of band is set to be equal to or lower than the first frequency, and when the frequency of the specific channel is lower than a middle frequency between the first and second frequencies, the frequency out of band is set to be equal to or higher than the second frequency into the combination of Resch and Jones's system in order to increase the flexibility of the system by allowing the user to change the bands of the variable band-pass filter.

***Allowable Subject Matter***

4. Claims 4-9 are allowable.

Claims 4-6 are directed to a television signal transmitter. They are identify the uniquely distinct features: "wherein the local oscillator is provided with a first varactor diode for changing the frequency of the local oscillation signal, the variable band-pass filter is provided with a second varactor diode for changing the tuning frequency, the television signal transmitter further comprises: a memory in which data for setting the frequency of the local oscillation signal and the tuning frequency is stored; a D/A converter for converting the data into a d. c. voltage; a first external power source; voltage adding means to which the d. c. voltage is supplied; and first switching means, the d.c. voltage is applied to the first varactor diode, a voltage outputted from the voltage adding means is applied to the second varactor diode, and the voltage of the

Art Unit: 2614

first external power source is enabled to be applied to the voltage adding means by the first switching means". The closest prior art, Resch (US Patent No. 4,564,858) and Jones (US Patent No. 5,051,711), either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Claims 7-9 are directed to a television signal transmitter. They identify the uniquely distinct features: "wherein the local oscillator is provided with a first varactor diode for changing the frequency of the local oscillation signal, the variable band-pass filter is provided with a second varactor diode for changing the tuning frequency, the television signal transmitter further comprises: a memory in which data for setting the frequency of the local oscillation signal and the tuning frequency is stored; a D/A converter for converting the data into a d. c. voltage; a second external power source; a third external power source; and second switching means, the d.c. voltage is applied to the first varactor diode, and one of the d. c. voltage, a voltage of the second external power source, and a voltage of the third external power source can be applied to the second varactor diode by the second switching means". The closest prior art, Resch (US Patent No. 4,564,858) and Jones (US Patent No. 5,051,711), either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Trang U. Tran** whose telephone number is **(703) 305-0090**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W. Miller**, can be reached at **(703) 305-4795**.

Application/Control Number: 09/826,669  
Art Unit: 2614

Page 6

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231


**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

TT TT  
February 7, 2004

  
**MICHAEL H. LEE**  
**PRIMARY EXAMINER**